NATLOAD Utility

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Invoking NATLOAD

To invoke the NATLOAD utility

- In batch mode, enter a direct command (see also Executing NATLOAD in Batch Mode).
- Online, enter the system command NATLOAD.
  The Load Functions menu is displayed.

Functions

From the Load Functions menu, invoke the following functions by entering a code, or a command in the command line, or by pressing a PF key:

Code	PF Key	Function	Explanation
A		Load All Objects, DDMs and Error Messages	Loads programming objects, DDMs and error messages.
L		Load Objects	Loads programming objects only.
D		Load DDMs	Loads DDMs only.
E		Load Error Messages	Loads error messages only.
S		Scan All Objects, DDMs and Error Messages	Scans programming objects, DDMs and error messages.
O		Scan Objects	Scans programming objects only.
V		Scan DDMs	Scans DDMs only.
M		Scan Error Messages	Scans error messages only
	PF10 (Files)	File Assignments for NATLOAD	See File Assignments in the section Introduction.

Below is information on:

- Scan
- Load

Scan

With the four Scan functions listed above, you can scan the work file to be loaded to find out what it contains, before you actually start to load its contents.

The range of programming objects, DDMs and/or error messages to be scanned can be narrowed down by the parameters you can specify on the Scan screens. The parameters for the Scan functions correspond to those of the Load functions, as described below.

Load

With the four Load functions listed above, you load Natural programming objects, error messages (and help texts), DDMs and delete instructions from a work file created by NATUNLD into system files:

- Programming objects are loaded into the Natural system files FNAT and FUSER. Objects in libraries whose names begin with SYS (except for the library SYSTEM) are loaded into the FNAT file; objects in all other libraries are loaded into the FUSER file. If the library SYSTEM is loaded from a Software AG installation dataset, it is loaded into the FNAT file, otherwise it is loaded into the FUSER file. See also File Assignments in the section Introduction.
- Natural system error messages are loaded into the system file FNAT. User-defined error messages are loaded into the files FNAT or FUSER like programming objects (see above). See also File Assignments in the section Introduction.
- DDMs are loaded into the Predict system file FDIC. See also File Assignments in the section Introduction.

When you select a load function from the Load Functions menu, the processing screen for that function will be displayed.

On that processing screen, enter a function code and, if required, the parameters described below to start the loading process.

Note:
Some of the parameters apply only to programming objects or DDMs or error messages, and, therefore, do not appear on all processing screens.

Parameters

The Load Functions screen provides the following parameters:

Field	Explanation

Load Except	N This field is not used (this is the default).
	Y Field specifications are negated and all programming objects/DDMs/error messages **except** the specified ones are loaded.
	This applies to the following fields:
	
	DDM Name — Date/Time From
	DDM DBID — Date/Time To
	DDM FNR — User ID
	Library — Error Number from/to
	Object Name — Language Codes
	Object Type
	
	Examples:
	
	`Load Except: Y`
	`Object Name: *`
	`Library ...: RPD`
	All programming objects in all libraries except those in the library RPD are loaded.
	
	`Load Except: Y`
	`DDM Name ..: AA*`
	All DDMs except those whose names begin with AA are loaded.
	
	Warning:
	For delete instructions, the Load Except field is ignored. See also the field Allow Delete below.

Object Name	The name of the programming object which is to be loaded. If you leave this field blank or enter an asterisk (*), all objects in the libraries specified under Library are loaded. To load a specific range of multiple objects, you can use the same range notations as described for Object Name in the section NATUNLD Utility.
Number	The maximum number of objects to be loaded. Every programming object, error message and DDM that meets the selection criteria is counted against this limit. If a saved object and a cataloged object of the same name are loaded one immediately after the other, they are counted as one object. If a short error message and a long error message of the same number and language code are loaded one immediately after the other, they are counted as one object. A delete instruction is counted as one object. When the specified number is reached, loading is terminated with an appropriate message.
Library	The name of the library to be loaded. If you leave this field blank or enter an asterisk (*), all libraries are loaded. To select a specific range of multiple libraries for loading, see Names and Ranges in the section Introduction.
New Library	If you leave this field empty, the programming objects are loaded into the target library as specified with the NATUNLD utility when the objects are unloaded. If you want the object to be loaded into a different library, you specify the name of that library in this field. **Attention:** If you have specified a range as library to be loaded, the new library name may be a range too, but the number of characters before the asterisk (*) **must not** exceed the number of characters before the asterisk in the Library field.

Field	Explanation
Object Type	The type(s) of programming objects to be loaded. If you leave this field blank or enter an asterisk (*), all object types of the object with the name specified under Object Name are loaded. For a selection list of possible object types, you either enter a question mark (?) in this field or press PF1 (Help). **Note:** Several programming object types can be specified at the same time and in any sequence. For example, specifying PAM loads programs, parameter data areas and maps.
Xref Data	Only applies with Predict and if the Predict Active References feature is installed. In this field, you specify whether cataloged objects are to be loaded together with their corresponding cross-reference data: N Ignores any existing cross-reference data for the cataloged object being loaded. S Loads cataloged object and its cross-reference data (if any). Y Loads cataloged object and its cross-reference data only if cross-reference data exist. F Loads cataloged object and its cross-reference data only if cross-reference data exist and if the object is documented in Predict. Under Natural Security, the Cross-Reference option in the respective library profile determines whether objects without cross-reference data can be loaded at all: If the Cross-Reference option is set to YES or FORCE, objects without cross-reference data are ignored by NATLOAD, regardless of the setting of the Xref data field (see also the XREF system command in the Natural System Command Reference documentation).
S/C Type	The form of programming objects to be loaded: A Both saved and/or cataloged objects (this is the default). S Saved objects only. C Cataloged objects only.
User ID	If you enter a user ID in this field, only those objects are loaded which were saved under this user ID. To specify a range of user IDs, see Names and Ranges in the section Introduction.
Date/Time From	Only those objects are loaded which were saved or cataloged on or after/before this date and time. See Dates and Ranges in the section Introduction for further details.
Date/Time To	
DDM Name	The name of the DDM to be loaded. If you leave this field blank or enter an asterisk (*), all DDMs are loaded. To load multiple DDMs, you can use the same range notations as described for Object Name in the section NATUNLD.
DDM DBID	Only DDMs with a specific database ID. Here the same applies as described for DDM DBID in the section NATUNLD Utility.
DDM FNR	Only DDMs with a specific file number. Here the same applies as described for DDM FNR in the section NATUNLD Utility.

Field	Explanation
Error Msg Type	The types of error message to be loaded: N Natural system error messages. U User-defined error messages. A All (Natural and user-defined) error messages.
Short/Long/All	The types of error message text to be loaded: A All (that is, short and long) error message texts. S Short message texts only. L Long message texts only. If you specify L, for each long error message, the corresponding short error message must be available. Otherwise, the long error message cannot be loaded.
Error Number	The first and last numbers of the error message range to be loaded.
Language Codes	The language code(s) of the error messages to be loaded. For valid language codes, see the system variable *LANGUAGE in the Natural System Variables documentation.
Allow Delete	This field is a safeguard against the accidental deletion of programming objects/error messages/ DDMs in the target system files. If the work file contains delete instructions (see Delete Instructions for Programming Objects, Delete Instructions for DDMs and Delete Instructions for Error Messages in the section NATUNLD Utility), this field determines whether the delete instructions are to be processed or not: N Delete instructions are not processed (this is the default). Y Delete instructions are processed and the objects concerned will be deleted from the target system files. If this field is set to Y, the entries in the fields Load Except and New Library are ignored; all other fields are evaluated to determine the range of objects to be deleted.
PC Upload	Only applies if Entire Connection is installed and you have entered the terminal command "%+" before invoking NATLOAD; otherwise you cannot enter anything in this field. In this field, you specify whether the work file containing the specified objects is to be uploaded from a PC.
Replace	Y Programming objects/error messages/DDMs which are already present on the Natural system file, are replaced by the newly loaded ones of the same names. N Programming objects/error messages/DDMs which are already present on the Natural system file are not replaced (this is the default).
Check Date	Only applies, if Replace is set to **Y**. It allows you to replace only "old" objects: N All existing objects will be overwritten (this is the default). Y Existing objects will be overwritten depending on their time stamps: only objects which were saved/cataloged before the objects of the same names to be loaded will be overwritten.
Check Version	Compares the version of the cataloged objects to be loaded with the current Natural version: N Performs no version check. All objects will be loaded (this is the default). Y Performs a version check. Objects cataloged under a Natural version higher than the current one will be rejected.

Verifying Subroutines and Classes

- Subroutine Names
- Class Names and GUIDs

Subroutine Names

When a cataloged object of type subroutine is loaded, NATLOAD also verifies the name of the subroutine it contains, that is, the name used in the DEFINE SUBROUTINE statement. The cataloged subroutine cannot be loaded if an object of type subroutine which contains a subroutine of the same name, already exists in the target library. The subroutine will then not be loaded; however, NATLOAD processing will continue.

Class Names and GUIDs

When a cataloged object of type class is loaded, NATLOAD also verifies the name of the class it contains, that is, the name used in the DEFINE CLASS statement. The cataloged class will not be loaded if an object of type class which contains a class of the same name or of the same GUID, already exists in the target library. NATLOAD processing, however, will continue.

Executing NATLOAD in Batch Mode

For the execution of NATLOAD in batch mode, use direct commands.

When you use a direct command, observe the following rules:

- The keyword NATLOAD can be placed in a line by itself.
- To separate the individual parameters of a direct command from one another, use either blanks or the input delimiter character (as defined by the session parameter ID; the default is comma).
- If the string of parameters is longer than a single line, enter the character defined with the session parameter CF (default is **%**) at the end of every line that belongs to the command. This indicates continuation on the next line. However, this is only possible if you specify the command NATLOAD in a line by itself. That is, you cannot use CF, if you enter NATLOAD in the same line where a multi-line command starts.

The syntax of the NATLOAD direct commands for loading/scanning and Examples of Direct Commands for NATLOAD in Batch Mode are shown in the section NATUNLD/NATLOAD Direct Commands.

Below is information on:

- Condition Codes and User Exits in Batch Mode

Condition Codes and User Exits in Batch Mode

Below is a description of NATLOAD condition codes and user exits available in batch mode.

The sources of NATLOAD user exits are named L-S-EX*nn*, where *nn* denotes the number of the user exit. The user exits are delivered in the Natural system library SYSUNLD.

To make a user exit available, catalog it under the name LOADEX*nn*, either in the Natural system library SYSUNLD or in one of its steplibs.

The name of each user exit source is different from the name of the corresponding cataloged object. This guarantees that the object is not affected if the user exit source is overwritten by an installation update.

NATLOAD processing in batch mode terminates with one of the following condition codes:

Code	Explanation
0	Loading executed successfully. If one or more objects were rejected during loading, the user exit LOADEX03 (source code L-S-EX03 in the library SYSUNLD) is invoked, if available. An object can, for example, be rejected if it has not been replaced. In the user exit LOADEX03, you can set a condition code.
33	An object to be replaced could not be deleted from the buffer pool: If "Replace=Y" was specified, an object to be replaced will, if necessary, also be deleted from the buffer pool. If the object cannot be deleted from the buffer pool, the new object will be loaded anyway and NATLOAD processing will continue.
35	Duplicate subroutine names or class names/GUIDs were found (see also Class Names and GUIDs in the section "Verifying Subroutines and Classes").
37	Objects requested for loading could not be found on work file.
38	Natural Security error occurred. With Condition Code 38, the user exit LOADEX02 (source code L-S-EX02) will be invoked. It allows you to stop processing when a Natural Security error occurs during the LOAD function.
40	An error occurred; loading terminated.

With any condition code except 0 and 38, the user exit LOADEX01 will be invoked, if available. The source code of that user exit is provided under the name L-S-EX01 in the library SYSUNLD.

NATLOAD Report

The NATLOAD utility generates (online and in batch mode) a report containing information on the objects loaded.

When you leave NATLOAD after the report has been displayed, a statistical report will be displayed, listing the number of objects processed.

After that, another screen will be displayed, showing the parameters used for processing.

See also NATUNLD/NATLOAD Commands for Reports in the section NATUNLD/NATLOAD Direct Commands.

